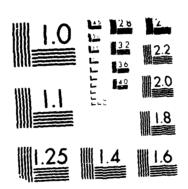
MD-R191 903 LUF (LOMEST USABLE FREQUENCY) MODEL UMCERTAINTY
ASSESSMENT(U) NAVAL OCEAN SYSTEMS CENTER SAN DIEGO CA
D B SAILORS ET AL JAN 87

UNCLASSIFIED

F/G 20/14 NL



MICROCOPY RESOLUTION TEST CHAP

## AD-A191 903



UNCL#

		R	EPORT DOCUM	ENTATION PAG	GE YV	<u> </u>		
1. REPORT SECUR	ITY CLASSIFICATION			16 RESTRICTIVE MARKINGS	1 A:	7 11 7		
UNCLASSIF	TED			ļ		V. 1 "	·	
26 SECURITY CLASSIFICATION AUTHORITY				3 DISTRIBUTION/AVAILABILITY OF REPORT				
26 DECLASSIFICATION DOWNGRADING SCHEDULE				Approved for public release; distribution is unlimited.				
4 PERFORMING ORGANIZATION REPORT NUMBERIS)				5 MONITORING ORGANIZATION REPORT NUMBERIS)				
						,	į	
68 NAME OF PERFORMING ORGANIZATION			6b Office SYMBOL (if applicable)	7. NAME OF MONITORING ORGANIZATION				
Naval Ocean	Naval Ocean Systems Center							
Bc ADDRESS City State and ZIP Coder				76 ADDRESS (City, State and	d ZIP Code)			
	CA 92152-50							
Be NAME OF FUND	ING SPONSORING	PRGANIZATION	Bb OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER				
•	val Warfare							
Systems Co	State and ZIP Codes	<del></del>	SPAWAR	10 SOURCE OF FUNDING NUMBERS				
ac ADDRESS:CNY	Siele sind zir Cedei			PROGRAM ELEMENT NO	PROJECT NO	TASK NO	AGENCY	
							ACCESSION NO	
Washington,				RDDA	MP57	NSA	DN288 591	
11 TITLE (include S	ecurity Classification)							
LUF Model	Uncertainty	Assessment					:	
12 PERSONAL AUT	HORIS							
D.B. Sailors								
Presentation 13b TIME COVERE			TO	14. DATE OF REPORT (Year, Marth, Day)  January 1987			DUNT	
16 SUPPLEMENTAR	NOITATION YE			<u> </u>				
17 COSATI CODES	-		18 SUBJECT TERMS (Continue	and reverse if necessary and vise	nedy by black outsiders			
FIELD GROUP SUB-GROUP			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)					
	<b>U</b>	555 555	-					
			1				1	
		cessery and identify by block r						
1814 LOFs of particular and mid-pat with the ob- months of J A modificati	from 29 path r paths, univ. h latitude. oserved data luly through ion to the ab	ed to assess the sis was established ersal and local tin Version 2.0 had a of 0.89. The ri October. An incressorption index terms	blique sounder lower couracy of the PRC for the assessment.  ne, sounder type, pane, bias of 0.55 MHz lands of 0.55 MHz lands error increases were asse in residual at rand which determines	PHET algorithm ( The data was scre tth length and ori- ow, an rms error of with increasing rang nid-latitude was no the latitudinal and	QLOF version ened into subsentation, season f 1.95 MHz, and ge. A higher ted. Reasons seasonal variat	2.0. A LORets to determ, month, sund a correlater residual was for these errition is suggest	data base of nine the effect nspot number, tion coefficient noted for the note are given.	
<u> </u>	AVAILABILITY OF ABS	STRACT  SAME AS RPT	DTIC USERS	UNCLASSIFIE			tam.	
	PONSIBLE INDIVIDUA			<u> </u>		22c OFFICE SYME	22c. OFFICE SYMBOL	
D.B. Sailors				619-225-7706 Code		Code 542		

**DD FORM 1473, 84 JAN** 

83 APR EDITION MAY BE USED UNTIL EXHAUSTED ALL OTHER EDITIONS ARE OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

LUF MODEL UNCERTAINTY ASSESSMENT D.B. Sailors and W.K. Moision Ocean and Atmospheric Sciences Division Naval Ocean Systems Center San Diego, CA 92152-5000 Windy

A statistical analysis of observed oblique sounder lowest observed frequency (LOF) and predicted lowest usable frequency (LUF) was used to assess the accuracy of the PROPHET algorithm QLOF version 2.0. A LOF data base of 1814 LOFs from 29 paths was established for the assessment. The data was screened into subsets to determine the effect of particular paths, universal and local time, sounder type, path length and orientation, season, month, sunspot number, and mid-path latitude. Version 2.0 had a bias of 0.55 MHz low, an rms error of 1.95 MHz, and a correlation coefficient with the observed data of 0.89. The rms error increases with increasing range. A higher residual was noted for the months of July through October. An increase in residual at midlatitude was noted. Reasons for these errors are given. A modification to the absorption index term which determines the latitudinal and seasonal variation is suggested.

Access	ion Fo	r	
NTIS	GRA&I		水
DTIC T	AB		
Unanno	unced		
Justif	icatio		
By Distri			
Avail	,65 <b>13</b> 17	gy Öc	ಿ≎3
	Avc i.	*:ii/(	. <b>™</b>
Dist	2131	291	
		-	
1 1-1			
M		1.	



DATE JUNED